

REMARKS

The Office Action Summary indicates that the Action is non-final. Accordingly, reexamination and further and favorable reconsideration of the subject application in light of the following remarks, pursuant to and consistent with 37 C.F.R. § 1.112, is respectfully requested.

The Office Action Summary correctly indicates that claims 1-35 are pending in the application. Claims 1-35 are subject to a restriction requirement. Claims 14-34 are withdrawn from consideration. Claims 1-13 and 35 are under consideration. Claims 1-3, 5, 8, and 10 stand rejected.

Applicant thanks the Examiner for indicating that claims 4, 6, 7, 9, 11-13 and 35 recite allowable subject matter. Claims 4, 6, 7, 9, 11-13 and 35 stand objected to as depending from a rejected base claim.

Request for Interview

It appears that prosecution of this application may be expedited by a conversation between the Examiner and Applicant's undersigned representative concerning the prior art of record. Therefore, it is respectfully requested that the Examiner grant an interview at the time that the Examiner considers this reply.

Former Rejection under 35 U.S.C. § 102 withdrawn

Claims 1-3, 5-8 and 10 were previously rejected under 35 U.S.C. § 102 as allegedly anticipated by WO 91/04785 (the '785 application). The rejection has not been repeated in the present Official Action and is thus understood to have been withdrawn.

Rejections under 35 U.S.C. § 103

Claims 1-3, 5-8 and 10 stand rejected under 35 U.S.C. § 103 as allegedly unpatentable in view of the '785 application. The rejection is respectfully traversed as failing to set forth a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *See*, M.P.E.P. § 2143. However, the '785 application neither teaches or suggests every element of the claimed invention, as arranged in the claims, nor provides any suggestion that would have motivated one of skill in the art to modify the apparatus that is disclosed to make the claimed invention.

Claim 1 recites:

A sensor- and/or separating element for the semi-permeable diffusion of molecules comprising:

- a) a mechanically stable substrate having at least one through-opening,
- b) a perforated membrane which is fluid-tightly connected to the substrate and extends at least across the through-opening; and
- c) at least one semi-permeable layer which is applied in firmly adhering manner to one or both sides of the membrane at least in the perforated region thereof, wherein the semi-permeable layer or semi-permeable layers is/are secured mechanically in the adjacent perforations and/or by chemical-structural and/or physical adhesion and/or adhesive intermediate layers and/or covalent surface bonding to the adjacent surfaces of the membrane, optionally of the substrate, or of a metallic film optionally additionally applied to one or both sides of the membrane.

The Examiner alleges that: "Regarding claim 1, reference '785 discloses [a] separation device including [a] substrate having more than one through-opening, a porous perforated membrane film, and a semipermeable layer adhered to the membrane film (elements 11, 10, 20, Fig. 2)." Thus, the Examiner has alleged that the substrate 11 of

FIGS. 1-3 of the '785 application corresponds to the "substrate" of part (a) of claim 1. The Examiner has alleged that the porous anodic film 10 of FIGS. 1-3 of the '785 application corresponds to the perforated membrane of part (b) of claim 1. And, the Examiner has alleged that the supporting layer 20 of FIGS. 1-3 of the '785 application corresponds to the semipemeable layer of part (c) of claim 1.

However, upon consideration of the purpose of the substrate 11 of the '785 application in the process described therein, it is immediately apparent that substrate 11 of the '785 application has no through opening, and cannot correspond to the substrate of part (a) of claim 1, which is "a mechanically stable substrate having at least one through-opening." Substrate 11 of the '785 application is shown to be free of any through-holes in FIGS. 1-3 as it must be for the method by which the porous anodic film 10 of the '785 application is made. Further, the porous anodic film 10 of the '785 application cannot correspond to the "perforated membrane which is fluid-tightly connected to the substrate and extends at least across the through-opening" of part (b) of claim 1, at least because it does not extend across any through hole in substrate 11. Finally, although the support 20 is described as being perforated, or optionally not perforated, it is not disclosed as being semi-permeable anywhere in the '785 application and can not correspond to part (c) of claim 1.

To better understand the differences between what is disclosed in the '785 application and the presently claimed invention, the Examiner's attention is respectfully directed to the manufacturing process described in the '785 application. As disclosed in the reference, a porous anodic film 10 is grown on a substrate 11, which is generally made of aluminum or an anodizable aluminum alloy, by a porous anodization technique. The substrate 11 has no through-holes where the film is grown. Then, a supporting layer 20 is attached to the outer surface of the anodic film 10, the supporting layer 20 preferably having perforations 21 being

quite large compared to the width of the pores 12 in the anodic film. As the support layer 20, a polymer layer may be used, the polymer layer being adhered or heat sealed to the anodic film 10. The anodic film 10 comprises branched pore regions 15 which introduce a weakened stratum into the anodic film 10 so that the film can be separated fairly easily along this stratum. After the supporting layer 20 has been attached to the outer surface of the anodic film 10, the anodic film 10 is detached from the metal substrate 11 along the stratum of weakness defined by the branched pore regions 15, preferably by peeling away the substrate 11 from the supporting layer 20 and the adhering membrane 10. (See, the '785 application at the Abstract, pages 5-76 and FIGS. 1-3.)

Yet another distinction is plain from the '785 application. At the end of the above process, “[t]he resulting structure has a non-metallic imperforate or perforated supporting layer (made, for example of plastic or ceramic) or other supporting structure reinforcing a porous anodic film in which the pores completely penetrate the film.” (See, the '785 application at the Abstract.) In other words, at the end of the process disclosed in the '785 application, the resulting structure has two parts, a supporting layer and a porous anodic film layer. The Examiner notes that the '785 application teaches that the support 20 can be removed or replaced. However, even if the reference describes an anodic film, in one embodiment attached to a polymer support, and in another being integrally bonded to a layer of sintered inorganic particles, the '785 application does not teach or suggest either the combination or arrangement of elements of a sensor- and/or separating element for the semi-permeable diffusion of molecules that are recited in claim 1.

Despite the apparent differences between the apparatus disclosed in the '785 application and the presently claimed invention, it has been alleged that

“Although the original substrate can be removed from the membrane, the substrate is originally adhered to the membrane, and the membrane can be further

treated to form a composite including a lower layer of second substrate, therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide a membrane with a perforated membrane and semipermeable layer, or alternatively provide a further support or bond the original support to the membrane by conventional methods, e.g. to provide strength to the membrane, in particular when the membranes are very thin and unable to be unsupported."

However, as noted above, the substrate described in the '785 application does not correspond to the substrate of claim 1 as it does not have any through holes. Thus the suggested modification to the teachings of the '785 application would still not produce the claimed invention. Moreover, there is no teaching or suggestion in the '785 application of a semipermeable layer. The combination of features of claim 1 is neither taught nor rendered obvious to a person skilled in the art by the '785 application. For example, in order to make an apparatus that is even close to the subject matter of present independent claim 1, it would have been required for the person skilled in the art to provide a different substrate that has at least one through-opening, to bond the substrate fluid-tightly to the porous anodic film, and to change the characteristics and materials of the substrate 11 and the supporting layer 20 such that the substrate can fulfill the function of the substrate of the claimed invention and the supporting layer can fulfill the function of the semi-permeable layer of the claimed invention. This is nowhere taught or suggested by in the '785 application, and would definitely not have been obvious to a person skilled in the art a the time the application was filed. Moreover, the person skilled in the art would have no apparent reason to deviate from the construction of the porous membrane taught in the '785 application.

To modify the teachings of the '785 application to arrive at the presently claimed invention would require changing the nature of the component parts, as all the elements of the present claim are not taught by the '785 application, and would require changing the arrangement of the modified components from the arrangements disclosed in the '785 application. The rejection does not show where in the reference itself or in the knowledge

generally available to one of ordinary skill in the art the necessary suggestion or motivation to modify the reference so extensively can be found. For at least the foregoing reasons, the rejection fails to set forth a *prima facie* case of obviousness. Accordingly, withdrawal of the rejection is respectfully requested.

CONCLUSION

In view of the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order. Such action is earnestly solicited.

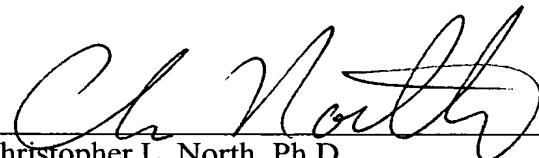
In the event that there are any questions relating to this application, it would be appreciated if the Examiner would telephone the undersigned concerning such questions so that prosecution of this application may be expedited.

Respectfully submitted,

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Date: March 8, 2004

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